

9. WHAT IS THE BEST MEANS OF CONTROL AND DESTRUCTION OF FLYING FOXES [*PTEROPUS GIGANTEUS* (Brünn.)]

A friend of mine in Upper Assam writes as follows: 'Some friends of mine are greatly plagued by the fact that during the past few years thousands of flying foxes have come into residence in three huge trees alongside their bungalow. The trees are literally black with them and they make a shocking noise night and day besides being too definitely repulsive to have any right on the premises.

'They can't cut the trees down but are very anxious to get rid of the pests. The only thing I can think of is to start several *chulas* (braziers) going under the trees on a dead still day when there is no wind and then keep on sprinkling sulphur on the embers. Can anybody suggest anything else to get rid of them? Apart from any other considerations nobody in the vicinity can grow any fruit!'

I should imagine that the above suggestion of burning sulphur in braziers below the trees in which flying foxes roost would only serve to move the pests away to another roosting place. What is wanted is a method of destroying them, or at least of controlling their numbers rigorously, and the high cost of cartridges these days makes shooting a rather expensive means of controlling such numerous creatures.

I note that the fruit-eating bats (Megachiroptera) are scheduled as 'vermin' in the Bombay Wild Animals and Wild Birds Protection Act, 1951. I think the collection and publication of advice on the control and destruction of all vermin, especially wild dogs, wild pigs, rodents, and flying foxes, would be useful.

DOYANG TEA ESTATE,  
OATING P.O.,  
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E. P. GEE

Col. Burton who saw the above letter before publication, writes:

**FLYING FOXES.** I can think of no ordinary method—shooting or the like—by which the flying fox can be controlled or destroyed.

The question is one affecting the whole of India, and should be dealt with by scientists versed in biological control through use of modern methods of use of insecticides and rodenticides.

It may be that some method can be found by which a captured flying fox can be inoculated with some agent which will cause a fatal disease to be passed on by the animal enlarged to its colony. The method would entail the capture and return of one of the species to each colony.

It has to be borne in mind that the flying fox frequents orchards of various kinds of fruits, and DDT used in lethal quantities may affect the pollination of fruit tree blossoms.

The several papers contributed by experts to the International Technical Conference, Lake Success, August 22-29, 1949 and published

in the volume of *Proceedings and Papers* (the 'grey book' I have styled it) should be read and studied:

'DDT and other Pest Control Chemicals' by Dr. C. H. Curran, pp. 351-358.

'DDT and the Balance of Nature', by Joseph P. Linduska, pp. 362-371.

'Indiscriminate use of insecticides', by Dr. H. S. Pruthi, Plant Protection Adviser, Department of Scientific Research, New Delhi, pp. 372-73 and several articles in French in the same publication.

**WILD DOGS.** The only way in which the wild dog can be controlled or destroyed is by one or more of the several following methods:—

- (i) Shooting when found at kills, or in the forests.
- (ii) Trapping—not easy.
- (iii) Destroying by means cyanide gas pumped into earths, and breeding dens.
- (iv) Poisoning of their kills with strychnine bihydrochloride in liquid form, strength about 10 or 11 grs. to an ounce of water. Method is to pour the poison into deep stabs and cuts and sprinkle on lumps of semi-detached meat.

(v) A poisoning method said to be very deadly is to inject a goat intravenously in an ear-flap by means of a hypodermic syringe with a fairly large needle-bore, care being taken that the bore of the needle remains in the vein and the point does not pierce to the other side on insertion. A 20 c. c. syringe is used and strength of the strychnine emulsion 40 grs. to the half pint of water.

For this goat method it is necessary to find a pool of water at which the dogs are drinking, and sit over the pool to ensure that no one removes the 'easy meat' for home consumption. The goat will fall *apparently* dead, but there may be only extreme and exceedingly painful rigor of the muscles, so a blow at the back of the head with a suitable instrument after, say, half a minute, is humane.

Due care also necessary in case of the first described poisoning method that the jungle people do not eat any of the meat.

The offering of money rewards for destruction of wild dogs gives results.

**WILD PIGS.** *Outside the forests.* Effective control is through removal of all unwanted cover such as cactus and thornbrakes, and the organization of inter-village pig hunts on a sound basis.

*Within the forests.* The tiger and panther should be allowed to do their own natural work of keeping down the pig (and monkey) population. The Bombay Government has encouraged the formation of inter-village pig hunts within the forests; and the Madhya Pradesh Government also gives encouragement by providing arms and ammunition. The Madras Government does not encourage these methods. Through use of large-mesh nets and beating out the jungles pig can be killed. *But*, unless the control of the operations is really effective all the edible creatures of the forests will be killed through such a

method. And there are other obvious objections, from the point of view of protection of wild life.

RODENTS. *Porcupines* give trouble to certain crops—vegetables, mealies, etc. They are not easy to destroy. Miscellaneous Note by Pitman at page 831, Vol. xxix may be seen. Use of cyanide gas would be effective in burrows with few exits.

*Rats, Bandicoots, etc.* Cyanide gas methods in use in municipal areas are suitable. But the contribution, 'The rice rats of Lower Sind and their control,' by P. V. Wagle, M.A.G. Vol. 32, pp. 330-338 should be read. In regard to rats damaging crops in South India, the notes on that subject by P. N. Krishna Ayyar, B.A., should be read. Perhaps the Sind method might have useful application to some of the Madras rats. The control of all kinds of harmful rodents is for the scientists to direct.

BANGALORE,  
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#### 10. SOME NOTES ON THE MALABAR GREY HORNBILL [*TOCKUS GRISEUS* (Bath.)]

In the *Journal*, Vol. 43, page 102, I recorded a few notes on the nesting habits of the Malabar Grey Hornbill (*Tockus griseus*) and have subsequently had occasion to watch at different times two young birds kept in captivity by my brother Shamoon.

They were obtained by Br. Navarro of St. Xavier's College from nests at Khandala, and I am detailing below notes on the adult females taken from the nests along with the young.

The first female taken on 5th May 1943 had not finished her moult, the primaries being shorter than the secondaries; the second mother taken in 1950 had the first primary only about 2 inches long.

In both cases the innermost rectrices were new quills while the outermost pair were bedraggled and frayed indicating that the moult commenced on the inside, as is usual with most birds. The iris of one bird was noted as reddish-brown.

An attempt was made to tame the second bird but she refused to feed and was released in the garden where she clambered up to the topmost branches of a tree and sat motionless for a long time. A piece of raw cucumber tossed up, failed to arouse interest and one piece fell on to the top of its beak. After 15 minutes the cucumber was in the same position, the bird not having moved at all. After some time she disappeared and was not seen again.

The first bird tamed by Shamoon was the larger of two of different sizes taken from the nest on 5th May when they were a few days old. The smaller bird (a female) died after about a month. The first notes were made on 11th July when the bird was 70-75 days old. The iris was noted as grey as against red brown (presumably for the adult) in the Fauna. The beak was horny, the upper mandible slightly darker, and the lower with a greenish tinge. On 6th August, the